IN THE CLAIMS:

1.   (currently amended) A method for indicating an alarm condition in an industrial process, said method comprising:

measuring a parameter of the industrial process, said parameter varying over time;

determining at least one parameter limit, said at least one parameter limit being a function of said parameter and varying over time;

buffering said parameter;

comparing, using a time-delayed value of said parameter, said parameter to said at least one parameter limit; and

indicating an alarm condition when said parameter is outside of a bound set by said at least one parameter limit at a time when said parameter is compared to said at least one parameter limit.

2.   (original) A method in accordance with Claim 1 wherein said at least one parameter limit comprises an upper limit and a lower limit.

3.   (cancelled)

4.   (currently amended)   A method in accordance with Claim [[3]] 2 wherein said upper limit is an average value of the parameter plus a predetermined constant multiple of a standard deviation of the parameter, and said lower limit is the average value of the parameter minus the predetermined constant multiple of the standard deviation of the parameter.

5.   (currently amended)   A method in accordance with Claim [[3]] 2 wherein said upper limit is an average value of the parameter plus a predetermined first

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constant plus a predetermined second constant multiple of a standard deviation of the parameter, and said lower limit is the average value of the parameter minus the predetermined first constant plus the predetermined second constant multiple of the standard deviation of the parameter.

6.   (currently amended)   A method in accordance with Claim [[3]] 2 wherein said upper limit is an average value of the parameter plus a predetermined constant and said lower limit is an average value of the parameter minus a predetermined constant.

7.   (currently amended)   A method in accordance with Claim [[3]] 2 wherein said upper limit and said lower limit are functions of a median value of said parameter.

8.   (currently amended)   A method in accordance with Claim [[3]] 2 wherein said upper limit and said lower limit are functions of a mode of sampled values of said parameter.

9.   (original) A method in accordance with Claim 1 wherein the industrial process includes at least one apparatus selected from the group consisting of a gas turbine engine, a steam turbine, an electric generator, an electric motor, a pump, a gearbox, and bearings, and said parameter is selected from the group consisting of pressure, temperature, position, acceleration, velocity, power, current, and fluid flow.

10.   (currently amended) An apparatus for indicating an alarm condition in an industrial process, said apparatus comprising a sensor configured to measure a parameter of the industrial process, a data acquisition system, and a computer, said apparatus configured to:

measure a parameter of the industrial process, said parameter varying over time;

determine at least one parameter limit, said at least one parameter limit being a function of said parameter and varying over time;

buffer said parameter;

compare, using a time-delayed value of said parameter, said parameter to said at least one parameter limit; and

indicate an alarm condition when said parameter is outside of a bound set by said at least one parameter limit at a time when said parameter is compared to said at least one parameter limit.

11.   (original) An apparatus in accordance with Claim 10 wherein said at least one parameter limit comprises an upper limit and a lower limit.

12.   (cancelled)

13.   (currently amended) An apparatus in accordance with Claim ~~12~~ 11 wherein said upper limit is an average value of the parameter plus a predetermined constant multiple of a standard deviation of the parameter, and said lower limit is the average value of the parameter minus the predetermined constant multiple of the standard deviation of the parameter.

14.   (currently amended) An apparatus in accordance with Claim ~~12~~ 11 wherein said upper limit is an average value of the parameter plus a predetermined first constant plus a predetermined second constant multiple of a standard deviation of the parameter, and said lower limit is the average value of the parameter minus the predetermined first constant plus the predetermined second constant multiple of the standard deviation of the parameter.

15.   (currently amended) An apparatus in accordance with Claim ~~12~~ 11 wherein said upper limit is an average value of the parameter plus a predetermined constant and said lower limit is an average value of the parameter minus a predetermined constant.

16.   (currently amended)   An apparatus in accordance with Claim ~~12~~ 11 wherein said upper limit and said lower limit are functions of a median value of said parameter.

17.   (currently amended)   An apparatus in accordance with Claim ~~12~~ 11 wherein said upper limit and said lower limit are functions of a mode of sampled values of said parameter.

18.   (original)   An apparatus in accordance with Claim 10 wherein the industrial process includes at least one apparatus selected from the group consisting of a gas turbine engine, a steam turbine, an electric generator, an electric motor, a pump, a gearbox, and bearings, and said parameter is selected from the group consisting of pressure, temperature, position, acceleration, velocity, power, current, and fluid flow.

19.   (currently amended)   A medium having machine-readable instructions recorded thereon that are configured to instruct a computer to:

input a sensed parameter of an industrial process, said parameter varying over time;

determine at least one parameter limit, said at least one parameter limit being a function of said parameter and varying over time;

buffer said parameter;

compare, using a time-delayed value of said parameter, said parameter to said at least one parameter limit; and

indicate an alarm condition when said parameter is outside of a bound set by said at least one parameter limit at a time when said parameter is compared to said at least one parameter limit.

20. (original) A medium in accordance with Claim 19 wherein said at least one parameter limit comprises an upper limit and a lower limit.

21. (cancelled)

22. (currently amended) A medium in accordance with Claim ~~21~~ 20 wherein said upper limit is an average value of the parameter plus a predetermined constant multiple of a standard deviation of the parameter, and said lower limit is the average value of the parameter minus the predetermined constant multiple of the standard deviation of the parameter.

23. (currently amended) A medium in accordance with Claim ~~21~~ 20 wherein said upper limit is an average value of the parameter plus a predetermined first constant plus a predetermined second constant multiple of a standard deviation of the parameter, and said lower limit is the average value of the parameter minus the predetermined first constant plus the predetermined second constant multiple of the standard deviation of the parameter.

24. (currently amended) A medium in accordance with Claim ~~21~~ 20 wherein said upper limit is an average value of the parameter plus a predetermined constant and said lower limit is an average value of the parameter minus a predetermined constant.

25. (currently amended) A medium in accordance with Claim ~~21~~ 20 wherein said upper limit and said lower limit are functions of a median value of said parameter.

26. (currently amended) A medium in accordance with Claim ~~21~~ 20 wherein said upper limit and said lower limit are functions of a mode of sampled values of said parameter.

27. (original) A medium in accordance with Claim 19 wherein the industrial process includes at least one apparatus selected from the group consisting of a gas turbine engine, a steam turbine, an electric generator, an electric motor, a pump, a gearbox,

and bearings, and said parameter is selected from the group consisting of pressure, temperature, position, acceleration, velocity, power, current, and fluid flow.

28.   (original) A method for indicating an alarm condition in an industrial process, said method comprising:

measuring a parameter of the industrial process, said parameter varying over time;

latching said parameter and buffering said latched parameter in a FIFO (first-in, first-out) buffer;

determining statistical functions of values of said buffered parameter stored in said FIFO buffer;

utilizing said determined statistical functions to determine one or more alert limits;

comparing value of the parameter to said one or more alert limits; and

indicating an alarm dependent upon said parameter being outside a bound set by the one or more alert limits.

29.   (original) A method in accordance with Claim 28 wherein said comparing the value of the parameter to said one or more alert limits comprises comparing a present value of the parameter to the alert limits.

30.   (original) A method in accordance with Claim 28 wherein said comparing the value of the parameter to said one or more alert limits comprises comparing a latched value of the parameter to the alert limits.

31.   (original) A method in accordance with Claim 28 wherein said indicating an alarm dependent upon said parameter being outside a bound set by the one or

more alert limits further comprises determine whether the parameter is outside said bound for a sufficiently long time to indicate an alarm.

32. (original) A method in accordance with Claim 31 further comprising indicating a severity level of the alarm, the severity level being dependent upon the length of time the parameter is outside said bound.

33. (original) A method in accordance with Claim 28 wherein said comparing the value of the parameter to said one or more alert limits further comprises inhibiting an alarm if a valid sample count of parameter values buffered in the FIFO is less than a predetermine value.

34. (original) An apparatus for indicating an alarm condition in an industrial process, said apparatus configured to:

latch a varying parameter value of the industrial process and buffer successive latched parameter values in a FIFO (first-in, first-out) buffer;

determine statistical functions of values of said buffered parameter stored in said FIFO buffer;

utilize said determined statistical functions to determine one or more alert limits;

compare value of the parameter to said one or more alert limits; and

indicate an alarm dependent upon said parameter being outside a bound set by the one or more alert limits.

35. (original) An apparatus in accordance with Claim 34 wherein to compare the value of the parameter to said one or more alert limits, said apparatus is configured to compare a present value of the parameter to the alert limits.

36.   (original)   An apparatus in accordance with Claim 34 wherein to compare the value of the parameter to said one or more alert limits, said apparatus is configured to compare a latched value of the parameter to the alert limits.

37.   (original)   An apparatus in accordance with Claim 34 wherein to indicate an alarm dependent upon said parameter being outside a bound set by the one or more alert limits, said apparatus is further configured to determine whether the parameter is outside said bound for a sufficiently long time to indicate an alarm.

38.   (original)   An apparatus in accordance with Claim 37 further configured to indicate a severity level of the alarm, the severity level being dependent upon the length of time the parameter is outside said bound.

39.   (original)   An apparatus in accordance with Claim 34 wherein to compare the value of the parameter to said one or more alert limits, said apparatus is further configured to inhibit an alarm if a valid sample count of parameter values buffered in the FIFO is less than a predetermine value.

40.   (original)   A medium having recorded thereon machine-readable instructions configured to instruct a computer to:

latch a varying parameter value of an industrial process and buffer successive latched parameter values in a FIFO (first-in, first-out) buffer;

determine statistical functions of values of said buffered parameter stored in said FIFO buffer;

utilize said determined statistical functions to determine one or more alert limits;

compare value of the parameter to said one or more alert limits; and

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indicate an alarm dependent upon said parameter being outside a bound set by the one or more alert limits.

41.   (original) A medium in accordance with Claim 40 wherein to compare the value of the parameter to said one or more alert limits, said instructions are configured to instruct a computer to compare a present value of the parameter to the alert limits.

42.   (original) A medium in accordance with Claim 40 wherein to compare the value of the parameter to said one or more alert limits, said instructions are configured to instruct a computer to compare a latched value of the parameter to the alert limits.

43.   (original) A medium in accordance with Claim 40 wherein to indicate an alarm dependent upon said parameter being outside a bound set by the one or more alert limits, said instructions are further configured to instruct a computer to determine whether the parameter is outside said bound for a sufficiently long time to indicate an alarm.

44.   (original) A medium in accordance with Claim 43 further having instructions recorded thereon that are configured to instruct a computer to indicate a severity level of the alarm, the severity level being dependent upon the length of time the parameter is outside said bound.

45.   (original) A medium in accordance with Claim 40 wherein to compare the value of the parameter to said one or more alert limits, said instructions are further configured to instruct the computer to inhibit an alarm if a valid sample count of parameter values buffered in the FIFO is less than a predetermine value.